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Asymmetry in media effects on perceptions of police: An analysis using a within-subjects design experiment

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The current study examines the influence of positive, negative, and mixed portrayals of the police in the media on perceptions of police. Participants were randomly assigned to watch an edited video segment from entertainment media. Employing a within-subjects design, participants were surveyed on their perceptions of police, exposed to a video clip, and then re-surveyed. Results from paired-samples *t*-tests provide evidence concerning media impact on perceptions of police with strong internal validity. The current findings indicate that media exposure can matter, particularly when it introduces negative images of police. Even when mixed images of police were presented, participants were more driven by the negative portrayal. This finding is in line with an asymmetrical impact of negative encounters with police relative to positive encounters.

Keywords: entertainment media; perceptions of police; asymmetry; cultivation theory

It is now well documented that positive perceptions of police are critical because the public's views of police are reliable predictors of compliance and voluntary cooperation with the police (Tyler and Huo, 2002, Mazerolle *et al.*, 2013, President's Task Force on 21st Century Policing, 2015). Researchers have identified that the quality of encounter with police is one of the strongest factors associated with general perceptions of police (Skogan, 2006, Maguire *et al.*, 2017, Sahin *et al.*, 2017). Nevertheless, most people do not often experience personal contact with police. National reports from the Bureau of Justice Statistics have consistently shown that among U.S. residents who are 16 and older, the rate of personal contact with police in the previous year remains approximately 20% (Durose *et al.*, 2007, Eith and Durose, 2011). Moreover, traffic-related contacts accounted for more than half of these encounters. Given that 90% of citizens who had face-to-face contact with police perceived that the police acted appropriately (Eith & Durose, 2011), it is important to consider indirect experiences as a source of global judgments of the police (Graziano, 2018).

The media can be effective agents that facilitate indirect experiences between police and citizens (Donovan and Klahm, 2015). According to the American Time Use Survey (2017), U.S. residents aged 15 years or over spent 2.7 hours per day watching television, and this accounted for more than half of leisure time. Some studies have discovered that crime and justice are particularly popular topics across different types of the media; the proportion of crime and justice topics introduced in daily newspapers, national and local television stations take up more than 20% of the entire coverage (Graber, 1980, Surette, 2015, Kappeler and Potter, 2017). With the advent of contemporary forms of the media (e.g., the Internet or social media) (Shearer and Matsa, 2018), a majority of American adults started to rely on these mediums to obtain information about crime and justice (Matsa and Mitchell, 2014). Recognizing the important role

of the media in shaping perceptions of police, researchers have attempted to empirically examine media effects (e.g., Callanan and Rosenberger, 2011, Donovan and Klahm, 2015, Intravia *et al.*, 2018).

Although the extant literature is important in our understanding of media effects, numerous questions remain to be answered. The current paper aims to make two contributions to this line of research. First, most of the research on media effects on perceptions of police relies on data from cross-sectional surveys, which makes it hard to have confidence in the causality of a relationship. To resolve this issue, some researchers have employed quasi-experimental designs using panel data (e.g., Weitzer and Tuch, 2004, Kochel, 2017), but the internal validity of the findings from these studies are weaker than those from well-executed experimental design (Shadish *et al.*, 2002). Thus, we seek to examine media effects on perceptions police using a randomized experiment (see also, Graziano *et al.*, 2010, Johnson *et al.*, 2017, Parry *et al.*, 2017).

Second, even though the images of the police are not consistent in the media (Surette, 2015), most empirical work on media effects fail to differentiate the content of the media, especially how the media depict the police. Sometimes, the police are portrayed as courageous and self-giving heroes, and at other times, they are shown to be irredeemably corrupt and antagonistic to the public (Benekos and Merlo, 2006, Dirikx *et al.*, 2012). Moreover, the images of the police in the media are often conflicting and complicated (Tyler, 2006). Therefore, different portrayals of the police may have differential effects on attitude about police.

Regarding potential differences in the impact of media exposure depending on the media content, one well-confirmed phenomenon in the field of psychology is worth considering. Psychologists have found that people tend to give more attention to negative information compared with positive information (Baumeister *et al.*, 2001). Similarly, the effects of a negative

portrayal of the police can be stronger effects than the effects of a positive portrayal of the police. Previous studies have reported that there are asymmetrical effects of positive and negative encounters with the police on perceptions of police (Skogan, 2006, Bradford *et al.*, 2009, Maguire *et al.*, 2017). This study examines if entertainment media can have asymmetric effects on people's perceptions of police.

We use a randomized experiment to examine the effects of positive, negative, and mixed portrayals of the police in the media. Participants were randomly assigned to three groups. Each group was assigned to view a brief video segment. One group was assigned to watch an edited video segment that focuses on police misconduct. The second group was assigned to watch an edited video segment that focuses on the sacrifice of the police. Lastly, the third group watched an edited video segment that contains both positive police images and police misconduct. This randomized experiment allowed us to examine the hypothesis regarding asymmetrical media effects.

Background

Cultivation effects on perceptions of police

Considering that most people rely on the media to supplement their lack of first-hand experience with the police (Surette, 2015), the potential missing link between police activities and an individual's perceptions of police can be clarified by taking the media into account. The majority of the studies examining media effects on perceptions of crime and justice draw on cultivation theory (e.g., Chiricos *et al.*, 1997, Eschholz *et al.*, 2003, Roche *et al.*, 2016, Intravia *et al.*, 2017). Cultivation theory posits that the media have a substantial impact on public attitudes (Gerbner and Gross, 1976). According to this theory, individuals who are exposed to the media tend to

adopt the worldview consistent with images presented in the media (Gerbner *et al.*, 1979, Gerbner *et al.*, 1980, Morgan and Shanahan, 2010, Custers and Van den Bulck, 2011).

In particular, Gerbner *et al.* (1979) paid attention to portrayals of crime and violence in the media. Since the media are flooded with sensationalized crime news, the more individuals are exposed to the media, the more likely it is that they are fearful and insecure about their safety (Gerbner *et al.*, 1979, Gerbner *et al.*, 2002, Roche *et al.*, 2016). Researchers have found that people's views of crime issues are closely aligned with the media's representation of reality (Sheley and Ashkins, 1981, Boda and Szabó, 2011, Choi *et al.*, 2014). Similarly, cultivation theory was applied to explain media effects on perceptions of police (Eschholz *et al.*, 2002, Gauthier and Graziano, 2018). Drawing a sample of 1,197 Californians, Gauthier and Graziano (2018) examined the impact of several media variables on perceived police legitimacy and found that awareness of negative media depictions of police was negatively associated with perceived police legitimacy. Eschholz *et al.* (2002) specifically focused on the relationship between attitudes toward the police and media variables including television news and "reality" shows. They found that watching television news was positively and significantly associated with attitude toward the police.

In her systematic review regarding the relationship between news media and perceptions of the police, Graziano (2018) found solid support for a contention that news media matters to how the public perceives police. However, she also discovered that the findings on media effects on perceptions of police were mixed depending on the research methodology and the measurement of the media. For instance, some researchers asked respondents whether they are aware of negative news coverage of police (e.g., police use of excessive force or corruption) to measure the concept of the media. They examined the relationship between respondents'

awareness and perceptions of police (Weitzer and Tuch, 2004, Wu *et al.*, 2013, Lee *et al.*, 2015, Sun *et al.*, 2016). Most of these studies have shown that awareness of negative media coverage of police is significantly and negatively associated with the various attitude towards the police.

On the contrary, some researchers focused on news consumption habits as their measures of the media (Callanan and Rosenberger, 2011, Dirikx and Van den Bulck, 2014, Roche *et al.*, 2016). Their measurements were typically comprised of the survey items asking how much time respondents spend on the use of a particular medium (e.g., television or the Internet). Unlike the findings from those studies considering awareness of negative media coverage, research examining the impact of media consumption habit on judgments of the police did not yield consistent results regarding media effects (e.g., Dowler and Zawilski, 2007, Wu, 2014, Intravia *et al.*, 2018).

While the majority of previous studies used survey design to estimate media effects on perceptions of police (e.g., Callanan and Rosenberger, 2011, Dirikx *et al.*, 2013), a few studies have employed quasi-experimental design to examine media effects on perceptions of police (e.g., Lasley, 1994, Kochel, 2017). For instance, Kaminski and Jefferis (1998) examined the impact of a celebrated violent arrest of a Black youth on diffuse support for the police. Using the data derived from the Greater Cincinnati Survey (GCS), they found that the televised arrest did not substantially change diffuse support for the police institution. Likewise, Chermak *et al.* (2006) also examined how celebrated crime cases influence attitudes toward police, taking into account various contextual variables. Respondents were asked how many newspaper articles they remembered reading about the case and how many TV stories they remembered watching the case. The results suggested that media measures did not influence attitudes toward police. The findings from later quasi-experimental studies have also been inconsistent, which offers no

conclusive answer regarding media effects (Graziano *et al.*, 2010, Hohl *et al.*, 2012, Kochel, 2017).

We believe that there are two main methodological issues for inconsistent findings of cultivation effects: measurement issues and limitations in the employed research design (see also, Surette, 1992, Shrum, 2007). The first is the lack of reliability and validity in measurement for media (Morgan and Shanahan, 1997). While some researchers solely focused on the frequency of media consumption such as hours of TV watching (e.g., Donahue and Miller, 2006), some researchers asked respondents to indicate their primary sources of information regarding crime and punishment (e.g., Dowler, 2002). Measures of the media also have varied depending on researchers' interest in media channels and genres (e.g., Dowler and Zawilski, 2007, Dirikx and Van den Bulck, 2014)

The second methodological issue is related to the research design employed (Chermak *et al.*, 2006, Callanan and Rosenberger, 2011). Most studies on media effects have relied on correlational findings using a cross-sectional design (Morgan and Shanahan, 2010). Many researchers have already mentioned the possibility of reverse causality between media exposure and their attitudes (see also, Choi, 2018, Graziano, 2018). For instance, Dowler (2002) stated that “respondents with pro-police attitudes may be attracted to crime drama.

Asymmetrical effects of positive and negative portrayals of the police

Many psychologists have consistently found and summarized “bad is stronger than good” (Peeters and Czapinski, 1990, Taylor, 1991, Baumeister *et al.*, 2001). Rozin and Royzman (2001) argue that human beings possess a negative bias to effectively deal with various events that occur in their lives. Negative events tend to occur less frequently but “more salient, potent, dominant in combinations, and generally efficacious than positive events” (Rozin and Royzman,

2001). Thus, a negative bias can be an adaptive reaction for organisms to avoid death-threatening situations.

Some policing researchers recognized that experiences with the police are weighted differently in the formation of individuals' perceptions of police (e.g., Jacob, 1971, Brown and Benedict, 2002, Weitzer and Tuch, 2004). Drawing on data from the Chicago city survey, Skogan (2006) compared the relative effects of negative and positive encounters with police on citizen confidence in the police. He first classified various types of encounters with the police into four different categories: positive and negative police and citizen-initiated encounters. The reference category compared with each group was citizens who did not have any encounter. His study found that the impact of encounters with the police can be asymmetrical; negative encounters with the police had a far greater influence on people's perceptions of police compared with positive encounters. In fact, a positive experience with the police was not predictive of citizen confidence in the police. More importantly, Skogan demonstrated external validity of his finding by replicating the result with different datasets from seven different locations. His finding is critical because it suggests that a single negative interaction with the police can leave long-lasting negative impressions toward the police, whereas how well the police do their jobs may not matter to how people perceive them.

Empirical studies have shown that positive interactions with police officers have a null or small effect on positive attitudes toward the police, whereas negative encounters with the police significantly reduce positive perceptions of police (Skogan, 2006, Miller and Davis, 2008, Skogan, 2012, Li *et al.*, 2016). Conversely, some researchers have shown that the ratio of negative effect to positive effect from encounters with police officers is not as high as Skogan (2006) proposed (Bradford *et al.*, 2009, Myhill and Bradford, 2012, Maguire *et al.*, 2017). For instance, Bradford *et al.* (2009) used data from a large-scale, representative-sample survey of Londoners and revisited Skogan's (2006) finding that people's

views of the police are mostly driven by negativity bias. Their findings indicated that the relative impact of positive and negative experiences with the police, whether police or citizen-initiated, differed depending on the dimension of confidence in the police.

Some researchers employed experimental designs to compare the effects of positive and negative treatment by the police (Johnson *et al.*, 2017, Maguire *et al.*, 2017). For example, using a laboratory-style randomized experiment, Maguire *et al.* (2017) examined if viewing positive interactions with police in a simulated traffic stop improve people's attitudes toward the police. Their results indicated the relative effects of observing negative encounters were slightly stronger than the effects of viewing positive. The asymmetry between negative and positive experimental conditions was found to be more pronounced for the global perceptions of the police than for the encounter-specific perceptions of the police.

The present study

The current study employed a within-subjects design to examine media effects on perceptions of police, confidence in the police and obligation to obey police. Collecting pre- and post-test data, participants were randomly assigned to watch one of three video clips derived from actual entertainment media. The present study draws on the previous studies discussed above and extends our knowledge in two important ways. First, this is the first study that examines the impact of entertainment media on our perceptions of police using a randomized experiment using video clips. Considering that the mixed finding regarding media effects on perceptions of the police stems from controversial measurement issues of the concept of the media (Morgan *et al.*, 2014), the use of video clips as the media can help us better understand cultivation effects. Second, this is the first to focus the relative effects of negative and positive portrayals of the police in the media. The discussion involving asymmetrical effects of positive and negative encounters should be considered within the context of media effects given that there are often contradicting and complicated images of the police in the media (Chiricos and Eschholz, 2002, Dirikx *et al.*, 2012, Donovan and Klahm, 2015).

Methodology

Participants

This study utilized the sample derived from undergraduate students at a Northwestern university. The data were collected using disproportionate stratification, including larger samples of students from the Department of Criminology and Criminal Justice. Instead of using a list of entire students as a sampling frame, a list of courses available for the spring semester of 2018 was used to draw the sample. From each sampling frame for CJ majors and non-CJ majors, 15 courses were randomly selected initially.

Instructors of the courses randomly selected were contacted through the university's e-mail system. Instructors were informed of the purpose of the study and that it would take 15 – 20 minutes to complete. When permission from the instructors was obtained, times were scheduled for the researcher to visit the classes where professors or instructors agreed to participate in the survey. Additional instructors of undergraduate classes in the sampling frame were contacted until the appropriate sample size was drawn based on a power analysis. Survey administration was halted when a total of 778 surveys were collected. The summary of the online survey indicates that the response rate was 94.34%; this was estimated considering students who checked “no” for the question asking their willingness to continue to participate ($n = 27$) and those who opened the link but did not provide any answer as non-respondents ($n = 17$). Originally, there were five experimental conditions, but given that the focus of the current study is to examine the impact of portrayals of the police, only participants who were assigned to watch three of the five experimental groups were used for this study ($n = 418$).

Procedures

The survey was conducted within the classes with professors or instructors who had agreed to participate in the study. The link for the *Qualtrics* survey was generated and using *Google URL Shortener*, a shortened link to the online survey was created. In each classroom, the projector screen was on, and the shortened link for the online survey was displayed. Students accessed the informed consent instruction and the entire survey through their own internet-connected devices (e.g., smartphones, tablets,

or laptop computers) by typing in the link for the survey. For students who did not wish to participate or those who were under 18 years, an alternative link was provided.

Using their own devices, students responded to the survey constructed in *Qualtrics*, a web-based survey service. Using the randomization function in *Qualtrics*, students were randomly assigned to the five experimental conditions that contained different video clips. The informed consent page was attached to the first page of the *Qualtrics* survey. Students were reassured that there was minimal harm from participation, and the voluntary nature of this study was stated explicitly. If students were under 18 years old at the time of survey administration, they were asked not to participate in the study. Collected data were secured in an electronic database that was password-protected in an electronic folder to maintain the anonymity of participants. Since it was possible that some students may not have brought earphones, about fifty extra earphones and five adapters for iPhone were prepared for students who did not bring them.

Treatments

While the five conditions were randomly assigned, the current study only uses data from the three experimental conditions. Edited video segments were parts of full TV shows or similar documentary footage. These shows were edited to be approximately two minutes long. The police misconduct condition depicts victims or victims' family members who experience or reflect upon police use of force. This video segment was derived from *Once Upon a Crime: U.S. Police Brutality*. The positive police condition focused on the high risk of police work and the police officers' sacrifices. Previews of two documentaries were edited and compiled: *Heroes Behind the Badge* and *Fallen Project*. The mixed condition was edited from both the police misconduct condition and the positive police condition so that mixed messages about the police could be produced.

Since there could be concerns regarding whether different video conditions were comparable in terms of its intensity, two strategies were employed. First, the edited video clips were reviewed by several criminal justice experts to determine content validity; that is, the video content was reviewed to determine

that the negative imagery of the police was indeed negative and the positive imagery of the police was indeed positive. After reviewing the feedback on the edited video clips, the researcher concluded that none of the video conditions was particularly intense and that content validity had been achieved. Second, we created the mixed condition that combines the video clips from the positive and negative conditions. The direction and magnitude of the effects of the mixed condition can offer insights into the impact of positive and negative representations of the police in the media. Considering that negative images of the police are hypothesized to exert a stronger impact on the audience, the mixed images should yield the negative effect. Moreover, the impact of the mixed portrayal of the police should not be as strong as the other two conditions. Such circumstantial evidence can strengthen the validity of our findings.

It should be noted that even though we attempted to make video clips that were comparable to each other, there were still some differences that existed across the clips other than positive/negative representations of the police. Nonetheless, we believe that differences in the video clips were not substantially significant to produce differential effects attributable to specific details of the video clips. Additionally, the results from manipulation checks indicated that participants could successfully identify the main theme of the video clip that they watched.

Measures

Before watching the video, participants responded to questions related to perceptions of police. Participants then watched one of the edited video segments based on random assignment. In a post-viewing questionnaire, participants were asked to respond to questions related to their media use, perceptions of crime and police, demographic variables (e.g., gender, race), victimization experiences, and prior negative contact with the police to conduct balance tests to ensure that the random assignment was effectively completed. We used visual analog scales (VAS) in our web-based survey. VAS refers to a psychometric scale that allows respondents to specify their response on a continuous line between two ends. Recent research method articles have demonstrated that VAS is beneficial in increasing the accuracy of responses and engaging respondents in the survey (Sikkel *et al.*, 2014). Considering the

recommendation from Roster *et al.* (2015), clear instructions regarding the VAS were provided to respondents. Respondents could specify their response with two decimals, instead of a standard scale with integers.

Outcome variables.

Some researchers examined the validity of constructs involving perceptions of police (e.g., Reisig *et al.*, 2007, Gau, 2011, Tankebe, 2013, Gau, 2014, Cao, 2015). Based on this development in measures, the current study differentiates two measures—confidence in the police and perceived police legitimacy—as separate dependent variables. Confidence in the police was measured with a four-item additive scale adapted from Gau (2011), and Reisig *et al.* (2007), (1) “*People’s basic rights are well-protected by police officers in my community,*” (2) “*Police officers can be trusted to make decisions that are right for my community,*” (3) “*Most police officers in my community do their jobs well,*” and (4) “*Police officers in my community are generally honest.*” The reliability test of the scale at pre-test (Cronbach’s $\alpha = .94$, mean inter-item $r = .80$) and post-test (Cronbach’s $\alpha = .96$, mean inter-item $r = .86$) indicated a high degree of internal consistency (DeVellis, 2012). A principal axis factoring analysis, using a direct oblimin method, was conducted to check the potential grouping of four items. Using the Kaiser-Guttman (or K1) criterion, the results indicated an emergence of one factor that had an eigenvalue of 1.00 or higher. For the other scales, the same steps to ensure reliability and validity were taken.

On the other hand, perceived police legitimacy was represented with three items that reflect obligation to obey the law, (1) “*People should accept police officers’ decisions even if they think that the police are wrong,*” (2) “*When the police issue a formal order, people should do what the police say even if they disagree with it,*” and (3) “*Generally speaking, people should do what the police tell them to do.*” (Gau, 2011, p. 497; Reisig *et al.*, 2007). Responses to these items were indicated on a seven-point VAS that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*) with two decimals. Each scale was constructed by summing responses so that the higher score indicates positive perceptions of police. The magnitudes of the reliability for the police legitimacy scale at pre-test (Cronbach’s $\alpha = .82$, mean inter-

item $r = .61$) and post-test (Cronbach's $\alpha = .84$, mean inter-item $r = .65$) were both above the acceptable range (DeVellis, 2012). All three items loaded on only one factor for pre- and post-test data respectively with one eigenvalue greater than 1.00.

Variables for balance tests.

Victimization experience were measured with eight different questions about respondents' previous experience of victimization incidences over the past one year: (1) "*having my money or my property stolen (e.g., pick-pocketing)*," (2) "*getting robbed (threat by force or threat of force)*," (3) "*being beaten or hurt*," (4) "*being scammed*," (5) "*being sexually harassed*," (6) "*having my property damaged*," (7) "*someone broke into my house*," and (8) "*someone followed and picked on me persistently*." The response categories were *yes* or *no*. Direct experience index was generated by summing and dichotomizing the responses (0 = non-victim, 1= victim).

Negative contact with police was measured with three dichotomous indicators that ask about respondents' previous experience with an unreasonable stop, insulting language, or physical force in the previous year (Lee and Gibbs, 2015). The response categories were *yes* or *no*. Negative contact with police index was generated by summing and dummy-coding the responses. Respondents who had no negative encounter with police was coded as 0, while respondents who had at least one direct negative encounter was coded as 1.

Race was measured according to the recommendation of Ulmer *et al.* (2009). Participants were asked to indicate what their races are. They were allowed to indicate more than one race: *White, Black or African American, American Indian or Native American, Asian, Native Hawaiian or Other Pacific Islander*, and *Some other race*. Race was dummy-coded (0 = non-white, 1= white). Sex was measured with a single item asking respondents' sex at birth (0 = female, 1 = male).

Previous studies have shown that students' majors are influential in shaping their perceptions of the criminal justice system because opportunities to learn about the criminal justice system differ between students who major in academic studies related to criminal justice and those who do not (Tsoudis, 2000,

Lambert, 2004, Lim, 2015). The major variable was dichotomized depending on students' majors and minors; students who major in or minor in criminology and criminal justice (CJ) majors were coded as 1, whereas non-CJ majors were coded as 0.

In this study, television viewing was included to test whether the random assignment process was accomplished. Two scales were used to tap into media exposure. The first measure specifically targeted respondents' hours watching television. For the average weekday, specific time periods were provided for respondents to increase the precision of their memory: *6 a.m. to noon, noon to 6 p.m., 6 p.m. to midnight, and midnight to 6 a.m.* (Nabi and Sullivan, 2001). Respondents were also asked to indicate the average amount of hours that they spend watching television on Saturday and Sunday respectively. The scale was constructed by weighting the average amount of television watching during the average weekday by five and summing that with the amount of television viewing during the weekend.

The second media scale tapped into a variety of media exposure. Weitzer and Kubrin's (2004) media scale was adopted. This measure was developed to consider diverse channels and specific content. In particular, respondents were asked the extent to which respondents agreed with the following statement: (1) *"I often watch national evening news programs such as World News with David Muir or cable news programs like CNN,"* (2) *"I often watch local television news for information other than weather and sports,"* (3) *"I often read the news or editorial sections of a daily newspaper,"* (4) *"I often listen to radio shows that invite listeners to call in to discuss current events, public issues, and politics,"* and (5) *"I often go online to get information on current events, public issues, and politics."* Each item was measured on a VAS where 1 is *strongly disagree*, and 7 is *strongly agree*. The composite scale was created by summation (range 5-35). The scale was internally consistent (Cronbach's $\alpha = .68$; mean inter-item $r = .30$).

Results

Balance Tests

Confidence in experimental research can be under threat when random assignment is not successfully accomplished. Balance tests or randomization checks are conducted to check whether the distribution of measures before the experiment is homogenous across experimental groups. It is expected that baseline information is independent of the assigned experimental condition. Bivariate analyses were conducted to ensure whether a random assignment was performed in a way that minimizes pre-existing differences between experimental groups. Table 1 includes the results of the bivariate analyses. Overall, there were no significant differences between groups regarding variables of interest and demographic information. More specifically, chi-square tests were performed to compare the distribution of the categorical variables across different experimental groups, while ANOVA tests were conducted for the continuous variables to compare the group means.

There was no significant difference in respondents' sex between the three groups, $\chi^2(2, n = 418) = .11, p = .95$. A chi-square test for independence also indicated that there was no significant association between race and experimental conditions, $\chi^2(10, n = 410) = 8.67, p = .56$. The number of students in CJ majors and non-CJ majors did not differ significantly across experimental groups, $\chi^2(2, n = 418) = .06, p = .97$. The group difference in victimization experience also did not reach statistical significance, $\chi^2(4, n = 417) = 3.33, p = .19$. The group comparison test revealed that there was no unequal distribution of participants who experienced negative interaction with police across different conditions, $\chi^2(2, n = 418) = 2.60, p = .27$. Put simply, it was not necessary to include any of these categorical variables as covariates when examining the effect of experimental conditions.

[Table 1 near here]

Turning to the results from ANOVAs (Table 2), there was no significant difference found regarding TV consumption between different groups, $F(2, 420) = .30, p = .743$. Also, the average level of media consumption was not significant across different groups, $F(2, 419) = 1.70, p = .18$. The researcher tested whether confidence in the police before media exposure differs depending on the experimental group, if there was no significant difference, $F(2, 420) = 1.43, p = .24$. This was also true for police legitimacy measured before treatment was randomly assigned, $F(2, 694) = 2.69, p = .07$.

[Table 2 near here]

Paired t-tests (Within-Subject Design)

Table 3 provides the differences between respondents' perceptions of police before and after the experimental condition. Several interesting differences were observed. First, there was a significant decrease in confidence in the police ($M = 19.63, SD = 5.99$) after watching the video that portrayed police misconduct as compared to the confidence in the police at Time 1 before media presentation ($M = 20.26, SD = 5.51$), $t(142) = 3.57, p < .001$ (two-tailed). The magnitude of the effect can be considered between small and medium (i.e., Cohen's $d = .31$; following Cohen's guidelines, an effect size of .5 is considered 'medium,' whereas that of .2 is considered 'small') (Cohen, 1988). Additionally, those who watched the video clip showing mixed images of police experiences showed a decrease in confidence in the police ($M = 19.39, SD = 5.81$) prior to watching the video clip ($M = 19.76, SD = 5.86$), $t(139) = 2.07, p = .041$ (two-tailed). Nonetheless, the estimated effect size (Cohen's $d = .17$) of the mixed video condition was small. Notably, there was no significant change after watching positive police images.

In short, when comparing pre-test perceptions of police to post-test measures, the video conditions that contained negative police images (negative police condition and mixed condition)

appeared to reduce confidence in the police. The negative impact of media exposure was more pronounced among students assigned to watch only negative police images.

[Table 3 near here]

Discussion

Skogan (2012) lamented that “there is doubtless a strong effect of the mass media on popular images of the police, but this is yet another factor that the police (to their frequent frustration) can do little about.” (p. 272). What remains uncertain is the clarity on the causal relationship between the media and perceptions of the police. While there is a fair amount body of research on media effects on perceptions of police (see also, Choi, 2018, Graziano, 2018, for an overview of media effects on perceptions of police), these studies were mostly based on cross-sectional surveys (e.g., Dowler, 2003, Intravia *et al.*, 2018) or panel surveys at best (e.g., Lasley, 1994, Kochel, 2017). The current study examined the effects of media exposure on perceptions of police using a randomized experiment (e.g., Graziano *et al.*, 2010, Johnson *et al.*, 2017, Parry *et al.*, 2017). The unique contribution of this study concerns its focus on entertainment media to examine the asymmetrical effects of positive and negative police representations in the media. Overall, the current findings seem to provide mixed support for the hypothesized direct impacts of the media.

Some findings from the current study were in line with previous studies. Specifically, a series of paired *t*-tests using the data from the within-subject design indicated that the negative police condition (Cohen’s $d = .31$) and the mixed police condition (Cohen’s $d = .17$) significantly reduced confidence in the police; however, the positive police condition was not related to changes in participants’ perceptions of police. It is notable that the positive police condition did not influence perceptions of police. Policing researchers have repeatedly demonstrated that

people's negative interactions with police have stronger effects on perceptions of police than the impact of positive interaction with police (Skogan, 2006, Bradford *et al.*, 2009, Myhill and Bradford, 2012, Maguire *et al.*, 2017). This asymmetrical impact of experiences with police is consistent with what some social psychologists have concluded as "bad is stronger than good" (Baumeister *et al.*, 2001). What is interesting about this study is that this asymmetrical impact is not limited to individuals' first-hand experiences with the police. The findings illuminate the importance of recognizing the negative consequences of police misconduct. Portrayals of police misconduct should be concerned about not just direct victims who were abused, but also their family members, friends and the audience who comes to know what happened to victims (Augustyn, 2016).

The current study shows that perceptions of police are not just driven by actual interactions with police but by vicarious experiences that can be presented through media. While many researchers mentioned this potential possibility, only a few studies have examined this relationship with randomized experiments (Johnson *et al.*, 2017; Maguire *et al.*, 2017; Parry *et al.*, 2017). Nonetheless, their focus was not on testing the impact of popular media on perceptions of police. The findings of this study suggest that people can form their perceptions through exposure to media, and this effect is particularly pronounced when the media contain negative police images.

If people's perceptions of police do not solely stem from their first-hand experiences, the implication is clear. Currently, police experience pervasive animosity from many segments of the public, and it has been assumed that the negative perceptions of police are by-products of the illegal or unfriendly performances of police; however, if negative perceptions of police can be partly attributed to distorted representations of police in media, blaming the police alone may not

be fair (Pollock, 2017). In the media, police officers often are presented as engaging in shooting suspects when the level of proof (or probable cause) has not been met, shooting people of colour, especially Blacks, based on racial biases, conducting illegal search and seizures, or using physical force to elicit information or confessions from suspects (Chiricos and Eschholz, 2002, Britto *et al.*, 2007, Dirikx *et al.*, 2012, Donovan and Klahm, 2015).

A small portion of police misconduct, especially the use of lethal force, should not be construed as regular police work. Empirical evidence supports this claim. Research indicates that the use of excessive force only accounts for a small proportion of all police encounters (Adams, 1995, Micucci and Gomme, 2005). A recent federal report revealed that among 39,914 U.S. residents who had interaction with police in 2008, 776 of them reported that they had experienced the use or threat of use of force by police officers (Eith and Durose, 2011). The majority of types of force used or threatened by police were concentrated on pushing or grabbing, threatening force, and shouting at residents (Eith and Durose, 2011). Moreover, Adams (1995) reported that almost two-thirds of the total use of force was justifiable. Taken together, only a minuscule portion of all encounters with police can be considered excessive uses of force. Put simply, distorted images of police reflect only part of the reality (Donovan and Klahm, 2015).

If misrepresentation of police permeates, police officers can be discouraged, and the negative relationship between community and police can become exacerbated (Nix and Wolfe, 2016, Wolfe and Nix, 2016, Nix and Wolfe, 2017). Some researchers have investigated media effects on police and found that negative publicity can reduce officers' willingness to engage in a community partnership (Wolfe and Nix, 2016). Part of the reason why police officers are demoralized by publicized police misconduct is that officers think that they are misunderstood

and wrongfully blamed, regardless of their actual performance (Weitzer, 2015, Pollock, 2017).

The audience of the media should recognize that police are not entirely responsible for problematic policing, but the public is, in part, influenced by the negative media portrayal of the police.

We caution that our findings should not be considered as evidence to absolve the police from the responsibility of low public perceptions of the police. According to research news can be diffused more pervasively and quickly regardless of whether it is true or false (Vosoughi *et al.*, 2018), especially when recipients perceive that the information is accurate (i.e., confirmation bias) (Kumar and Shah, 2018). In other words, people are willing to believe that police misconduct is common because they do not hold the police in high regard, which leads them to interpret negative news about the police in a way that confirms their pre-existing notions (Nickerson, 1998). Considering that people are sensitive to negative images of police in the media. This suggests that police need to pay special attention to reducing negative police performance presented in the media. The best way to cut down the amount of negative information involving police is to improve the quality of police performance. Specifically, police have recently received much attention due to several incidents involving use of excessive force. Media coverage often scrutinizes whether the use of force in the publicized cases was fair and legitimate, and it illuminates that police officers' actions were unconstitutional. Put simply, negative police representation in the media can only be diminished by reducing the number of illegal activities in which police have involved.

There are several limitations of this study. The first limitation involves the dosage (the amount of time exposed to media) and intensity (the level of seriousness) of media exposure. Initially, when this study was proposed, the media conditions planned to use were longer (about

8-10 minutes) and included more provocative images. During the IRB meeting, it was strongly suggested that the proposed video conditions be edited. The IRB committees recommend that the video condition be shorter and milder, editing out violent images regarding police use of force and crime. While their recommendations are reasonable considering the potential risk of psychological harms on research participants, the question remains as to whether more intense, more prolonged, and more realistic media exposure results in more extensive changes in perceptions of police. The second limitation of the current study is that it does not provide evidence regarding long-term effects of the media. Media researchers have identified differences between long-term effects and short-term effects of media exposure (Gerbner and Gross, 1976, Bushman and Huesmann, 2006, Morgan *et al.*, 2014). The current study did not measure respondents' perceptions of police long after the experiment was conducted. Future studies should pursue whether the findings from the present study are tenable even long after media exposure has stopped or if the media exposure has an extended duration.

Notwithstanding its limitations, the current study provides evidence concerning media effects on perceptions of police with strong internal validity. The current findings indicate that media exposure can matter, mainly when it introduces negative images of police. Police misconduct, especially the use of excessive force, has become a staple of news reports. While the media's role as a watchdog is essential to check and balance the power of police, the audience should never forget that a distorted representation of police in the media is limited in reflecting the complicated reality of police work. At the same time, considering that people react to negative news more sensitively, police departments should endeavor to reduce the amount of police misconduct by incorporating evidence-based programs into their organization.

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Table 1. Demographic characteristics and bivariate statics results

	Video 1 Negative Police (n = 142)	Video 2 Positive Police (n = 139)	Video 3 Mixed Condition (n = 137)	Total Sample (n = 418)	Bivariate Statistics χ^2
Sex					$\chi^2(2, n = 418) =$
Male	46.5% (66)	48.2% (66)	48.2% (66)	47.6% (199)	.11, $p = .95$
Female	53.5% (76)	51.8% (72)	51.8% (71)	52.4% (219)	
Race					$\chi^2(10, n = 410) =$
White	77.0% (107)	80.9% (110)	75.6% (102)	77.8% (319)	8.67, $p = .56$
Black or African American	15.1% (21)	12.5% (17)	20.0% (27)	15.9% (65)	
American Indian/ Native American	0.7% (1)	0.0% (0)	0.7% (1)	0.5% (2)	
Asian	2.2% (3)	1.5% (2)	2.2% (3)	2.0% (8)	
Native Hawaiian/ Pacific Islander	0.0% (0)	0.7% (1)	0.0% (0)	0.2% (1)	
Other	5.0% (7)	4.4% (6)	1.5% (2)	3.7% (15)	
CJ Major					$\chi^2(2, n = 418) =$
Yes	50.7% (72)	51.1% (71)	49.6% (68)	50.5% (211)	.06, $p = .97$
No	49.3% (70)	48.9% (68)	50.4% (69)	49.5% (207)	
Victimization Experience					$\chi^2(2, n = 417) =$
Yes	27.5% (39)	37.7% (52)	32.8% (45)	32.6% (136)	3.33, $p = .19$
No	72.5% (103)	62.3% (86)	67.2% (92)	67.4% (281)	
Negative Encounter with Police					$\chi^2(2, n = 418) =$
Yes	19.0% (27)	24.5% (34)	27.0% (37)	23.4% (98)	2.60, $p = .27$
No	81.0% (115)	75.5% (105)	73.0% (100)	76.6% (320)	

Table 2. Participant media consumption habits, pre-existing perceptions of police, and bivariate statics results

	Video 1 Negative Police (n = 144)	Video 2 Positive Police (n = 141)	Video 3 Mixed Condition (n = 139)	Total Sample (n = 423)	Bivariate Statistics <i>F</i>
Mean (SD)					
TV Consumption	35.55 (24.77)	34.23 (24.05)	36.54 (26.43)	35.44 (25.05)	$F(2, 420) = .298$, $p = .743$
Media Consumption	16.15 (5.54)	14.92 (5.75)	15.73 (5.80)	15.60 (5.70)	$F(2, 419) = 1.701$, $p = .184$
Confidence in the Police	20.12 (5.49)	19.10 (5.27)	19.76 (5.86)	19.70 (5.55)	$F(2, 420) = 1.434$, $p = .240$
Police Legitimacy	14.27 (4.09)	13.44 (4.09)	14.49 (3.79)	14.07 (4.00)	$F(2, 421) = 2.688$, $p = .069$

Table 3. Paired *t*-tests for perceptions of police within each experimental group

Variable	Video group	Pre-test		Post-test		<i>t</i> -Statistic	Cohen's <i>d</i>
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Confidence in the Police	Negative Police	20.26	5.51	19.63	5.99	3.57***	0.31
	Positive Police	19.14	5.28	18.99	5.65	1.108	0.07
	Mixed images	19.76	5.86	19.39	5.81	2.07*	0.17
Police Legitimacy	Negative Police	14.26	4.10	14.10	4.04	1.08	0.09
	Positive Police	13.43	4.07	13.67	4.36	-1.60	-0.13
	Mixed images	14.52	3.78	14.58	3.79	-0.47	-0.04

* $p < .05$, ** $p < .01$, *** $p < .001$.